A

SERMON

Preached before the

Royal College of Physicians, London,

IN THE

PARISH-CHURCH of ST. MARY-LE-BOW,

On MONDAY, SEPTEMBER 18, 1749.

12

THE WISDOM AND GOODNESS OF GOD PROVED FROM THE FRAME AND CONSTITUTION OF MAN.

69.3.f.2.

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On MONDAY, SEPTEMBER 18, 1749.

Being the FIRST of the ANNIVERSARY SERMONS
Appointed by the WILL of the LADY SADLEIR,
Purſuant to the DESIGN of her Firſt HUSBAND,

WILLIAM CROUNE, M. D.
Fellow of the College of Phyſicians, and of the Royal Society.

By THOMAS BIRCH, M. A. F. R. S.
And Rector of the United Pariſhes of ST. MARGARET-PATTENS, and ST. GABRIEL-FENCHURCH.

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TO

Dr. RICHARD TYSON, Preſident,

AND TO

Dr. GIDEON HARVEY, Elect.
Dr. RICHARD MEAD, Elect.
Sir EDWARD HULSE, Bart. Elect.
Dr. JAMES JURIN, Elect.
Dr. WILLIAM WASEY, Elect. and Cenſor,
Dr. RALPH BOUCHIER, Cenſor,
Dr. ROBERT NESBITT, Elect. and Cenſor,
Dr. ABRAHAM HALL, Elect.
Dr. SAMUEL HORSMAN, Cenſor and Treaſurer,
Dr. THOMAS LAWRENCE, Regiſter,

AND TO

The reſt of the FELLOWS of
THE ROYAL COLLEGE OF PHYSICIANS, London,

This SERMON is,
with the higheſt Deference and Reſpect,
dedicated by their moſt obedient,
and moſt humble Servant,

THOMAS BIRCH.

PSALM CXXXIX. 14. former part.

I WILL PRAISE THEE, FOR I AM FEARFULLY AND WONDERFULLY MADE.

THE exiſtence of an infinite, intelligent and independent being, the author and governor of the univerſe, is a truth ſo evident from the frame and order of the world, that the ignorance of it is abſolutely inexcuſable; ſince the perception of this, and the other important principles flowing from it, requires only a moderate degree of underſtanding and attention, and a freedom from every falſe biaſs, which irregular paſſions and vicious habits are apt to lay upon the mind.

The ſacred writings in every part of them raiſe our thoughts from the view of the creation to the creator, from the effects to the all-perfect cauſe. "The heavens declare "the glory of GOD; and the firmament ſheweth his handy-"work. Day unto day uttereth ſpeech, and night unto "night ſheweth knowledge." PSALM xix. 1, 2. And the great apoſtle of the gentiles obſerves, ROM. i. 20. "that the "inviſible things of GOD from the creation of the world are "clearly ſeen, being underſtood by the things, that are "made, even his eternal power and godhead."

Vanity, ſuperficial inquiry, ſpleen, perverſeneſs of heart, an impatience of all reſtraints, and a malignant intention of undermining the ſupports of the peace and happineſs of mankind, have in almoſt every age led ſome perſons to attempt

to exclude providence from the adminiſtration of the world, and to account for the phænomena of nature without the intervention of an intelligent cauſe. But how groundleſs and chimerical are the ſeveral hypotheſes of an infinite ſucceſſion of cauſes and effects, a blind fatality, or the fortuitous concourſe of atoms floating in empty ſpace? And how ſoon do theſe abſurd ſyſtems, with the gloomy doctrines of HOBBES, and the unintelligible ones of SPINOSA, vaniſh before the demonſtrations of NEWTON *, the ornament of human nature,

* " The main buſineſs of natural philoſophy, *ſays that great writer in* " *his* Optics, *p.* 344, 345. 3*d edit.* is to argue from phænomena without " feigning hypotheſes, and to deduce cauſes from effects, till we come to " the very *firſt cauſe*, which certainly is not *mechanical*; and not only to " unfold the mechaniſm of the world, but chiefly to reſolve theſe and ſuch " like queſtions: What is there in places almoſt empty of matter; and " whence is it, that the ſun and planets gravitate towards one another, " without denſe matter between them? Whence is it, that nature " doth nothing in vain? And whence ariſes all that order and beauty, " which we ſee in the world? To what end are comets? And " whence is it, that planets move all one and the ſame way in orbs con- " centric; while comets move all manner of ways in orbs very excentric? " And what hinders the fix'd ſtars from falling upon one another? How " came the bodies of animals to be contrived with ſo much art; and for " what ends were their ſeveral parts? Was the eye contrived without " ſkill in optics, and the ear without knowledge of ſounds? How do the " motions of the body follow from the will; and whence is the inſtinct in " animals? Is not the ſenſory of animals that place, to which the ſenſitive " ſubſtance is preſent, and into which the ſenſible ſpecies of things are car- " ried through the nerves and brain, that there they may be perceived by " their immediate preſence to that ſubſtance? And theſe things being rightly " diſpatch'd, does it not appear from phænomena, that there is a being in- " corporeal, living, intelligent, omnipreſent, who, in infinite ſpace, as it " were in his ſenſory, ſees the things themſelves intimately, and thoroughly perceives

ture, as well as of his age and country, who has inconteſtably prov'd, that the univerſe is perpetually ſupported by the exertion of a divine immaterial power acting by fix'd and conſtant rules; and thus inſeparably connected religion and philoſophy, and ſhewn the atheiſt to be wholly deſtitute of reaſon amidſt all his boaſted pretences to it. So juſt is the obſervation of an illuſtrious and penetrating genius † of the laſt century, that tho' *a little philoſophy* may incline men to the diſbelief of religion, yet a *depth* in it brings them back to it: And, for his own part, he declares with his uſual force and vivacity of ſentiment and ſtyle, that he had rather believe all the fables of the Legend, the Talmud, and the Alcoran, than that this *univerſal frame is without a mind.*

" perceives them, and comprehends them wholly by their immediate pre-
" ſence to himſelf? Of which things the images only carried through the
" organs of ſenſe into our little ſenſoriums, are there ſeen and beheld by
" that, which in us perceives and thinks. And tho' every true ſtep made
" in this philoſophy brings us not immediately to the knowledge of the firſt
" cauſe, yet it brings us nearer to it, and on that account is to be highly
" valued." And afterwards, p. 381. he obſerves, " that if natural philo-
" ſophy in all its parts ſhall at length be perfected, the bounds of moral
" philoſophy will be alſo inlarged. For ſo far as we can know by natural
" philoſophy what is the firſt cauſe, what power he has over us, and what
" benefits we receive from him; ſo far our duty towards him, as well as
" that towards one another, will appear to us by the light of nature. And
" no doubt, if the worſhip of falſe gods had not blinded the heathen,
" their moral philoſophy would have gone farther than to the four cardinal
" virtues; and inſtead of teaching the tranſmigration of ſouls, and to wor-
" ſhip the ſun and moon, and dead heroes, they would have taught us to
" worſhip our true author and benefactor, as their anceſtors did under the
" government of NOAH and his ſons, before they corrupted themſelves."

† " Lord chancellor BACON, *in his* eſſay on atheiſm.

The perfections of this ſovereign and governing mind ſhine forth in every part of that immenſity of worlds, of which our ſolar ſyſtem is perhaps the leaſt ſignificant. But we need extend our thoughts no farther than the conſideration of our own frame and compoſition for the fulleſt conviction; for man himſelf, the principal inhabitant of this lower world, will, in every diſtinct light, in which we view him, appear an irrefragable evidence of his creator's power, wiſdom, and goodneſs. The royal pſalmiſt, upon ſuch a conſideration, full of aſtoniſhment and gratitude, breaks out into theſe emphatical expreſſions in an hymn animated with all the ſublime of poetry and devotion: "I will praiſe thee, for I am "fearfully and wonderfully made: Marvellous are thy "works, and that my ſoul knoweth right well. My ſub-"ſtance was not hid from thee, when I was made in ſe-"cret, and curiouſly wrought in the loweſt parts of the "earth ‡. Thine eyes did ſee my ſubſtance yet being un-"perfect; and in thy book all my members were written, "which in continuance were faſhioned, when as yet there "was none of them. How precious alſo are thy thoughts "unto me, O God! How great is the ſum of them!"

‡ The latter part of this verſe, which is obſcure in our tranſlation, will receive great light and force from Grotius's comment upon it, *Tom.* I. *p.* 245. Oper. Theologic. *edit. Lond.* 1679 *fol.* who obſerves, that the Hebrew word, render'd by our tranſlators *curiouſly wrought*, "ſignificat velut "acu pictus. Diſtinctionem pulcherrimam membrorum comparat operi "Phrygionico. Illud in *inferioribus terræ* ſignificat in *utero*, ut Epheſ. IV. "9. Eſt mutua metaphora; nam & inferiora terræ *uterus* dicuntur et *cor terræ*." See likewiſe Dr. Patrick's paraphraſe on the pſalms, *vol.* II. *p.* 521, 522. *edit.* 1680, *in* 8*vo.*

This

This paſſage ſuggeſts to us an excellent ſubject for our contemplation. For what branch of knowledge can be of more uſe and importance to man than that of himſelf? And what ſcene of nature can afford greater variety and ſatisfaction, than the human compoſition, which is in all the parts of it ſtupendous? But it is a ſubject, which I enter upon with a juſt diffidence from its grandeur and extent; and therefore ſhall confine myſelf to ſuch a general repreſentation of it, as is moſt ſuitable to a popular audience; conſcious how prepoſterous a vanity it would be to imagine, that I could advance one fact or reflexion, which would be new, or that my utmoſt induſtry would not omit a thouſand, which are well known to that learned body, by whoſe appointment I ſtand here; who to all the ſkill of their predeceſſors have added their own improvements in one of the nobleſt ſciences within the compaſs of human inquiry, and who dedicate their ſuperior knowledge and experience to the relief and benefit of their fellow-creatures.

In diſcourſing upon the words of the pſalmiſt, I ſhall conſider both parts of the compounded nature of man, the ſtructure of his body, and the powers of his ſoul: And each of theſe topics will ſupply us with ample materials for aweful and devout admiration.

I. The body offers itſelf at firſt to our obſervation; and this is ſo full of the ſignatures of divine contrivance, that nothing can be more abſurd, as well as impious, than the *Epi-*

curean

curean aſſertion, that it was originally the product of chance, without the leaſt appearance of deſign in its formation. For the ſlighteſt view of it will convince us of the moſt perfect deſign both for beauty and uſefulneſs. And in conducting the mind towards this conviction it will be proper to examine firſt the general harmony of the parts, and then deſcend to the particulars, and their ſeveral uſes and ſubſerviencies to the whole.

The union and ſymmetry of the ſeveral parts, almoſt infinite as they are in number and variety, figure and ſituation, are exquiſite beyond imagination. Every member, organ, and ſenſe diſcharge their peculiar functions in an exact correſpondence with the reſt; and all are ſo juſtly diſpoſed and connected, as to contribute to the mutual aſſiſtance of each other, and to the general convenience. Nor can we conceive the poſſibility of any thing being added, which would not be ſuperfluous, or of any thing being taken away, but what would be neceſſary.

The exterior form of man is very different from, and has a viſible pre-eminence over that of the brute ſpecies; a pre-eminence, which his reaſon enables him to maintain againſt the mere uninſtructed inſtincts of animals of ſuperior ſtrength and ſwiftneſs.

His erect ſtature gives him not only a peculiar air of dignity and majeſty, but likewiſe a capacity of contemplating the heavens, and of proſecuting thoſe aſtronomical diſcoveries, which tend to inlarge his ideas of the univerſe and its almighty

architect. Without this poſture he could not eaſily have turn'd himſelf to every kind of buſineſs proper for him: His hand would have almoſt loſt its uſe; nor would his eyes have been capable of extenſive proſpects, or of being caſt round him in all directions. To ſupport this erect poſture the bones of the whole body are admirably adapted; and the ſeveral parts of it plac'd with the ſame juſtneſs of contrivance to poiſe it; the various muſcles concurring to anſwer every poſture, and comply with every motion, without any previous thought or reflex act of the mind.

The ſize of the body is another inſtance of excellent deſign, being exactly ſuited to the labours and employments requiſite for man, and his intereſt and ſecurity with regard to all other creatures. For if it had been leſs, he would have been unequal to the management of thoſe creatures; and a more enormous and gigantic form would have render'd him an incumbrance to himſelf; while the greater degree of ſtrength reſulting from it would have been unneceſſary in moſt caſes, and in ſome might have been abus'd to pernicious purpoſes.

The ſkin incloſing the whole body is of ſuch a delicate texture, that, while it admits of continual perſpiration, it confines the blood to its proper veſſels, defends the nerves and fibres, and by its tranſparency gives that beauty and vivacity of colour to the face, which is inimitable by the moſt maſterly hand of the painter.

Under

Under the ſkin are ſpread the veins and arteries, branch'd into innumerable ramifications; and convey the blood from the heart to every part of the body, and return it to its fountain, in an inceſſant circulation; the diſcovery of which, after having eſcap'd the obſervation of many ages, was reſerv'd to do honour to our immortal countryman.

The moſt vital parts, the great organs of reſpiration and concoction, are ſecur'd by the incloſure of the ribs; which are of ſuch a form and extent, as give full ſcope to the dilatation of theſe organs.

The diviſion of the leg at the knee and ancle, and that of the arm at the elbow and wriſt, are attended with many advantages, which are more eaſily conceiv'd than deſcrib'd.

The hands are peculiarly adapted by their contexture and form for ſtrength and pliableneſs, and, in conſequence of this, for all the purpoſes of labour and ingenuity.

The muſcles and tendons, which govern the bones of the fingers, fit them for a vaſt variety of motions, and the exerciſe of the ſeveral mechanical arts, and of the more elegant ones of painting and muſic. Nor could theſe performances have been executed, if the fingers had not been divided and ſeparately moveable ||. Add to this, that if they had been

|| Εὐ δὲ μεμηχάνηται καὶ τὸ εἶδος καὶ τὴν φύσιν τὴς χειρὸς. Διαιρετὴ γὰρ καὶ πολυσχιδὴς, ἵνι γὰρ ἐν τῷ διαιρέτην εἶναι, καὶ συνθέτην εἶναι, ἐν τούτῳ δὲ ἐκεῖνο οὐκ ἔνεστι. Ariſtotel. de partib. Animal. L. IV. c. 10. p. 1034. Tom. I. edit. Guil. Du Val, Paris, 1629 fol. Vide etiam Galen. de Uſu Partium L. I. c. 5.

of

of equal ſize and length, great inconveniences would inevitably have follow'd, beſides the loſs of that beauty, which ariſes from variety. And it is an eminent proof of the divine wiſdom, that a circumſtance, which, upon a tranſient view, appears of no conſequence, yet is abſolutely neceſſary, not only for all the regular and delicate, but even the groſſer works of the hand.

The nails have alſo their uſe as well as beauty, as they are a defence to the points of the fingers, which are moſt expos'd to danger, and give them ſtrength and a quicker ſenſe of feeling; a ſenſe, which is, for obvious reaſons, much more acute in the fingers and palms of the hands, than in any other part of the body.

The firmneſs and flexibility of the neck are owing to the *vertebræ*, which extending down the whole back enable the body to bend, and furniſh it with greater ſtrength for the ſupport of burthens.

The peculiar ſtrength of the bones, which form the head, is highly requiſite for protecting from violence the brain, the origin of ſenſation and motion, and the ſeat of the mind. And this being larger in proportion in man than in any other animal, the head, in order to contain it, is of the moſt capacious figure, almoſt ſpherical.

The hair, which covers the head, ſerves to cheriſh and keep warm the brain; to abate the force of any ſtroke, that

might endanger the ſkull; and to add a grace and ornament to the face.

The face is an aſſemblage of features united by the moſt beautiful proportions and harmony, and form'd to diſcover to others our inward motions, our various paſſions and affections, in a manner infinitely more extenſive than can be done by the uſe of words. It ſpeaks to the eye; and this language is not only univerſally underſtood, but generally much more ſincere than what is utter'd by the lips.

The infinite variety in the compoſition of theſe features is a new evidence of divine contrivance §, and of prodigious importance to the world. For this diſtinction in the characters of the countenance is neceſſary for the ſupport of juſtice, commerce and friendſhip; and to prevent a general diſorder and confuſion; ſince without this it would have been impoſſible to diſtinguiſh the moſt intimate relations and friends from ſtrangers, or the innocent from the guilty. And it is an amazing conſideration, that ſuch a diverſity of faces ſhould be compatible with ſo ſmall a number of parts compoſing them, and of which the diſpoſition and arrangement is always the ſame.

§ Jam in facie vultuque noſtro, cum ſint decem aut paulò plura membra, nullas duas in tot millibus hominum indiſcretas effigies exiſtere; quod ars nulla in paucis numero præſtet affectando. PLIN. *Natural. Hiſtor.* L. vii. *cap.* 1. Inter cætera, propter quæ mirabile divini artificis ingenium eſt, hoc quoque exiſtimo, quod in tantâ copiâ rerum nunquam in idem incidit. Etiam quæ ſimilia videntur, cum contuleris, diverſa ſunt. SENEC. *Epiſtol.* cxiii. Vide etiam Lipſium in locum.

This variety is no leſs obſervable in the tones of voice and hand-writing of men; and the advantages of it are equally important and univerſal.

The eye would deſerve a whole volume to unfold its ſtructure, and to ſhew the aſtoniſhing ſkill, with which it is adapted to uſe, ornament, and ſecurity. And there is not one member in the whole body compos'd of a greater number or variety of parts, or order'd with more exact ſymmetry in one ſmall but admirable ſyſtem.

The lips heighten the beauty of the face, and ſerve to modulate and vary the ſounds, that form our ſpeech; a faculty, which is the great medium of the pleaſures of friendſhip and ſociety.

The ſtructure of the muſcles, which has lately been exhibited and illuſtrated in another place with the utmoſt exactneſs and perſpicuity *, is ſuch a proof of the inimitable ſkill of the divine geometer †, that, compar'd with it, all the powers of human mechanics appear low and contemptible. And the theory and laws of their motions have long exercis'd the greateſt genius's, and ſtill left room for the ſagacity of the phyſician, philoſopher, and mathematician; tho' perhaps no hypotheſis will be found more probable, than that advanc'd

* By Dr. THOMAS LAWRENCE in his lectures in Latin at the college of phyſicians on the 14th, 15th, and 16th of *September* 1749.

† Ὁ Θεὸς ἀεὶ γεωμετρεῖ.

by an excellent writer ‡, of the action of a nervous fluid, a portion of the univerſal elaſtic matter diffus'd thro' the world; the reality of which ſeems countenanc'd by the late aſtoniſhing experiments in electricity.

Nor is the body, thus amply furniſh'd as it is with the means of enjoyment, left deſtitute of thoſe of defence againſt accidents and external violence. The eye and ear have a peculiar quickneſs, and are in a proper poſition, for diſcerning dangers, tho' at a very conſiderable diſtance: The hand is form'd to protect us from them; and the tongue ready to call in additional help. The principal parts, the brain, the nerves and arteries, the heart and lungs, are ſecur'd by their very ſituation; and a proviſion is made for the loſs of others, or any defect in them, by their being double. And infinite are the contrivances of divine providence to enable nature to ſhake off whatever annoys it, and to recover itſelf. To all which may be added, that even liableneſs to pain, and uneaſy ſenſations ariſing either from internal diſorders or outward objects, are calls to us for the care of our health and ſafety, much more effectual, than our imperfect knowledge of things, and calm reaſon, would be without them. And whenever the natural proviſions for our ſecurity or recovery fail, we are furniſh'd with the ſalutary ſtores of the animal, vegetable, and mineral kingdoms, which the art of medicine, proceeding upon the ſure foundations of the united experience of all ages, and a judicious ſtudy of the animal ſy-

‡ Dr. MEAD, in his Mechanical account of poiſons, introduction, p. xxii, & ſeqq.

ſtem,

ſtem, can apply to the moſt beneficial purpoſes of removing or abating every diſorder, and reſtoring health and vigour.

Our ſenſes are all form'd with a degree of quickneſs and force exactly ſuited to our condition; nor could any alteration have been made but to our extreme prejudice. Exalting the power of taſting to a greater ſenſibility would have render'd our moſt common and ſimple food abſolutely nauſeous and diſagreeable. Our ſmelling, if it had been more intenſe, muſt have been overpower'd and oppreſs'd by the *effluvia* of any animal or vegetable, which we approach'd. A greater acuteneſs of the ſight would have preſented us with nothing but ſcenes of deformity and terror. If our ſenſe of hearing had been heighten'd, how miſerable a condition we ſhould have been in, may be judg'd of from the effect of even the ſlighteſt ſounds upon the organs of diſtemper'd perſons. All ſecrecy of words and actions would have been baniſh'd from human life; and unremitting noiſe and tumult kept us in continual alarms and diſquietude. The like inconveniences would have attended the raiſing our ſenſe of feeling; ſince what is now pleaſing to us, muſt have then been inſupportably painful.

Such and ſo exquiſite is the frame of the human body; ſo full of tranſcendent art and deſign, that GALEN, after an attentive obſervation of its general ſymmetry, determines it to be the workmanſhip of conſummate wiſdom and power ‖, chal-

‖ De uſu partium, L. xvii. Ἐγὼ δ' ὥσπερ ἰδίξα τὴν κατασκευὴν τοῦ σώματος

challenging the aſſertors of the doctrine of atoms to find but one, even the minuteſt, of all the numerous parts of it, that is not ſerviceable to its proper end, or might be alter'd to advantage: Upon which condition he engag'd to adopt their opinion, that chance was the author of it §. He reproaches them likewiſe with their monſtrous inconſiſtency in admiring the ſkill of the ſculptor in a ſtatue, and at the ſame time denying the infinitely greater art and deſign diſplay'd in the formation of the living man himſelf. Upon the whole therefore he concludes, that his own deſcription of *the uſe of the parts*, the nobleſt of all his works, might be juſtly ſtil'd a real *hymn to the creator* *. And if ſuch were the ſentiments

ἡμῶν ἄκραν ἐνδείκνυσθαι τῷ ποιήσαντος αὐτὸ σοφίαν ἅμα καὶ δύναμιν, κτλ. Id. de fœtuum formatione. Oper. tom. i. p. 219. edit. Baſil. 1538. fol.

§ Ἀλλ' ἐκεῖνο γε θαυμάσαι τῶν ἀνδρῶν ἔστιν, ὅσοι τὴν φύσιν ἄτεχνον εἶναι λέγουσιν, εἰ τὰς μὲν πλάσεις ἐπαινοῦσιν, ὅταν ἴσα τὰ δεξιὰ τοῖς ἀριστερῶς ἀκριβῶς ἐργάζονται, τὴν φύσιν δ' οὐκ ἐπαινῶσι, πρὸς τὴν τῶν μορίων ἰσότητα, καὶ τὰς ἐνεργείας παρασχοῦσαν, ἔτι τε πρὸς τοῦτο τὴν χρῆσιν αὐτῶν εὐθὺς ἐξ ἀρχῆς ἅμα τῷ γεννηθῆναι διδαξαμένην τὸ ζῷον. Ἦ Πολύκλειτον μὲν ἔστι θαυμάζειν ἐπὶ τῇ τῶν μορίων ἀναλογίᾳ τοῦ καλουμένου κανόνος ἀνδριάντος, τὴν φύσιν δ' οὐκ ἐπαινεῖν, ἀλλὰ καὶ τέχνης ἁπάσης ἀποστερεῖν χρη, τὴν ἀναλογίαν τῶν μορίων, οὐκ ἔξωθεν, ὡς οἱ πλάσαι, μόνον, ἀλλὰ καὶ διὰ βάθους ὑποδειξαμένην. Ἦ οὐ καὶ ὁ Πολύκλειτος αὐτὸς ἐκείνης ἔστι μιμητὴς, ἐν οἷς γε δυνηθῆ γενέσθαι μιμητὴς; Galen. de uſu Partium, l. xvii. p. 500. Oper. tom. i.

" * This ſacred diſcourſe, ſays he, I compoſe as a real hymn to our crea-
" tor, convinc'd as I am, that true piety does not conſiſt in this, that I ſa-
" crifice to him many hecatombs of bulls, and burn perfumes and caſſia;
" but that I firſt underſtand myſelf, and then explain to others, the nature
" and extent of the wiſdom, power, and goodneſs of GOD. For his diſpo-
" ſition to furniſh the univerſe with ſo much beauty, and to deny it no
" poſſible good, appears to me a demonſtration of the moſt perfect good-
" neſs;

ments of this wiſe pagan, who was in ſome meaſure reſtrain'd by the prejudices of the age, in which he liv'd, from the purſuit of anatomical reſearches, and a thorough examination into the receſſes of the body †, wherein the greateſt ſubtilty

" neſs; for which reaſon he deſerves to be ador'd by us in hymns as a good " being. And it is an inſtance of the higheſt wiſdom to have found out the " beſt means of thus adorning the world; as it is of an abſolute and unſur- " mountable power to have effected every thing, which his will determin'd".

— Ἱερὸν λόγον, ὃν ἐγὼ τῷ δημιουργήσαντος ἡμᾶς ὕμνον ἀληθινὸν συντίθημι, καὶ νομίζω τοῦτ' εἶναι τὴν ὄντως εὐσεβείαν, οὐχὶ εἰ ταύρων ἑκατόμβας αὐτῷ παμπόλλας καταθύσαιμι, καὶ τὰ ἄλλα μυρία μύρα θυμιάσαιμι, καὶ κασίας, ἀλλ' εἰ γνοίην μὲν αὐτὸς πρῶτος, ἔπειτα δὲ καὶ τοῖς ἄλλοις ἐξηγησαίμην, ὅσος μὲν ἐστὶ τὴν σοφίαν, ὅσος δὲ τὴν δύναμιν, ὁποῖός δε τὴν χρηστότητα. Τὸ μὲν ἐθέλειν κοσμεῖν ἅπαντα τὸν ἐνδεχόμενον κόσμον, καὶ μηδενὶ φθονεῖν τῶν ἀγαθῶν, τῆς τελεωτάτης χρηστότητος ἐγὼ δεῖγμα τίθεμαι, καὶ ταύτη μὲν ὡς ἀγαθὸς ἡμῖν ὑμνείσθω. τὸ δ' ὡς ἂν μαλίστα κοσμηθείη, πᾶν ἐξευρεῖν ἄκρας σοφίας, τὸ δὲ καὶ δρᾶσαι πάνθ' ὅσα προείλετο, δυνάμεως ἀπτήκτου. Id. ibid. l. iii. p. 402. Ἄλις μὲν γὰρ ὡς ὁ παρὰ τοῖς μελικοῖς, ὃς ἔνιοι λυρικοὺς ὀνομάζουσιν, ποιητὰις τρόφη τις ἐστὶ καὶ ἀντίτροφος, ὕτω καὶ τρίτος ἐποδὸς, ὃν ἰσάμενος πρὸ τῶν βωμῶν ᾖδον, ὡς φασιν, ὑμνοῦντες τὸς θεὸς ἐκείνῳ τοίνυν εἰκάσας τὸν λόγον τόνδε τὴν προσηγορίαν αὐτῷ μετήνεγκα. Id. l. xvii. p. 556.

† Tho' GALEN, who flouriſh'd about the year of Chriſt 140, was a much greater anatomiſt than any, who had appear'd before him; yet Dr. WOTTON in his *Reflections upon antient and modern learning*, c. xvii. p. 195. 3d edit. obſerves, " that in his time dead bodies were ſeldom opened; and " he was often obliged to uſe apes inſtead of men, which ſometimes led him " into great miſtakes." And VESALIUS and others affirm, that he diſſected only the bodies of apes and other brute animals, and never thoſe of men. But Dr. JAMES DOUGLAS in his *Bibliographiæ Anatomicæ Specimen*, p 19. defends him from that imputation, and ſhews, that he made uſe of the latter as well as of the former. " Sed illum non ſimiarum modo, verum etiam hominum cadavera ſæpe diſſecâſſe abunde probant ipſius autoris teſtimonia. Nam lib. 13. de uſu part. " propoſitum eſt mihi, inquit, ſolius hominis " ſtructuram explicare." lib. 1. de anat. adminiſtr. " Inſpicere oportet

" quamque

tilty and complication of art are exerted; how exalted would his devotion have been, if he had been poſſeſs'd of the knowledge of our HARVEY, GULSTON, WILLIS, GLISSON, LOWER, BRIGGS, or CROUNE; not to mention their ſucceſſors in our own times, of equal induſtry, genius, and ſagacity?

But what muſt be our admiration, when we raiſe our conſideration from the body, the mere ſhell and tenement of man, to the higher part of his compoſition, his mind; a ſyſtem combin'd from the powers of reaſon, moral faculties, and generous inſtincts and ſocial affections; qualities, which give him a ſupereminent prerogative over all ſenſible beings, and a nearer reſemblance to his great author?

I. Our reaſon includes in it a variety of powers; as vigour and quickneſs of thought; the faculty of reflecting upon the ſimple ideas, which we receive in by our ſenſes; of abſtracting, uniting, and ſeparating theſe ideas; of comparing them, examining their relations, their agreement and diſagreement, and thence forming a judgment concerning them; ſtrength and extent of memory; ſubtilty of invention; and a ſelf-determining power, and abſolute freedom of choice, the foundation of all virtue and morality.

" quamque particulam, præſertim in hominibus." Et, ut verbo dicam, ſtructuram multarum partium in homine aliis animantibus diſſimilem diſertis verbis aperit & deſcribit, & membra brutorum ac hominum inter ſe comparat. Huc quoque ſpectat, quod & præcipuum hâc in re cenſeri debet, quod deſcriptiones plurium, quas tradit, partium, ſoli homini conveniant, ac quid habet in ſui ſtructurâ peculiare, copiosè exponit."

And

And tho' the degrees of intelligence are different in different perſons, yet even this inequality ſhews a wiſe diſpoſition of providence, ſince it evidently tends to the improvement of the mind, and the general intereſts of ſociety; being a ſtrong excitement to mutual converſation and a reciprocal communication of knowledge, and to emulation, the friend of induſtry, and the ſource of excellence. Signal advantages likewiſe ariſe from another conſtitution, which the ignorant or half-thinker might object to, the ſlow opening and growth of our faculties, and our gradual progreſs in the proper uſe of all our powers, and in the buſineſs and enjoyment of life. The former inſpires diffidence and docility of temper, and ſtrengthens thoſe faculties by habits of attention and labour: And the latter is neceſſary to the acquiſition and exerciſe of the virtues of diligence, experience, prudence, patience, and the diſcipline and government of ourſelves; virtues, upon which depends our merit as moral agents, and our ſelf-approbation, and which are the genuine preparatives for a more exalted ſcene of exiſtence, which will open and inlarge itſelf to all eternity.

2. But ſtrong as our rational powers are, and ſufficient, if we make a faithful application of them, to diſcover the ſeveral relations we ſtand in, and the duties we owe, firſt, to that infinite being, on whom we depend every moment of our duration, and then to thoſe ſubordinate ones, with whom we are connected; we have ſtill additional to theſe powers, and concurring to the ſame ends, a moral ſenſe, by which we inſtantaneouſly feel the difference of actions in all impor-

tant caſes, approving one, and condemning another, antecedently to the exerciſe of our reaſon. This faculty, to which every honeſt uncorrupt heart bears teſtimony, and which is acknowledg'd by the beſt writers of ethics amongſt the antients, is an admirable proviſion of the deity to lead us to the practice of virtue, while our reaſon is too weak to exert itſelf, and our paſſions, not being brought under a proper diſcipline, might hurry us into vice, and fix us in the habits of it.

III. The affections and inclinations to ſociety and to the common good, implanted in us by our infinitely-benevolent creator, are another excellence of the human ſyſtem, without which it would have been extremely defective; ſince ſelf-love, left without any balance of more generous principles of action, would have made the world a very unpleaſing and unſafe ſcene.

If we add to theſe conſiderations that of the union of the ſoul with the body, we ſhall ſee an inſtance of divine wiſdom and power, which tranſcends our comprehenſion: How two ſuch different beings co-operate together, act reciprocally upon each other, and mutually partake of each other's pleaſures and ſufferings: How certain impreſſions on the body excite ſo ſuddenly correſpondent thoughts in the ſoul: And how the thoughts of the latter, in like manner, occaſion certain motions of the former. Nor is the prodigious power of the mind over the body more conceivable; every limb, muſcle, and nerve, being immediately obedient to the determinations of our will, without the leaſt conſciouſneſs in the mind of the mode

of

of this amazing operation: While, on the other hand, the independence of the machine of the body upon the concurrence of the mind in the moſt eſſential animal functions, as the circulation of the blood, reſpiration, and the like, is a neceſſary proviſion againſt an untimely diſſolution of our being, which men might often have been tempted to bring upon themſelves, if it could have been done in ſilence and ſecrecy, by a mere act of the will ſuſpending thoſe functions.

This tranſient and imperfect ſurvey of our frame and nature might ſuggeſt to us a variety of obſervations and reflections equally inſtructive and delightful to us: But the limits of ſuch a diſcourſe will reſtrain me to the following.

I. The reaſonableneſs of the pſalmiſt's acknowledgment of the divine perfections, and his gratitude for the effects of them. *I will praiſe thee.* And what can be an higher ſubject of praiſe, and reverence, and adoration to rational and intelligent beings, than infinite power, conducted by conſummate wiſdom, and unlimited goodneſs? What criminal ingratitude is it to our ſupreme benefactor, what diſloyalty to the ſovereign, and what impiety to the parent of the univerſe, not to live under a conſtant and habitual ſenſe of theſe aweful and amiable attributes? His all-perfect nature is the grandeſt theme for our contemplation; and no object certainly can deſerve our attention in compariſon of him, who is the inexhauſtible fountain and origin of all that profuſion of beauty and magnificence ſpread thro' the boundleſs expanſe of univerſal nature; and in whom reſides the perfec-

tion of all thoſe moral excellencies, the faint reſemblances of which we ſo much eſteem and admire in inferior beings. And ſuch an employment of the mind is not only due from us by every obligation, but it is our higheſt perfection and happineſs. For as the power of contemplating the Deity ſhews the ſuperior dignity of human nature; ſo the exerciſe of that power ſupplies it with pleaſures the moſt exquiſite and refin'd, moſt ſuitable to its higheſt faculties, ſuch as at once fill, purify, and exalt the ſoul. It is a perpetual fund of joy and hope to the virtuous mind in all ſituations and circumſtances, from a thorough conviction, that this preſent ſtate of probation is only the infancy of our being; and that, if we acquit ourſelves, in the rank aſſign'd us by providence, with ſincerity and dignity, we ſhall ſoon be tranſlated into a ſtate of perfection and immortality.

II. The knowledge of the nature of man affords him the cleareſt idea of his duty and his happineſs. The ſuperiority of the mind over the body, and the excellence of our rational powers, point out the propriety and neceſſity of maintaining a juſt order and œconomy within us, and keeping our paſſions under a due ſubjection. By which means we ſhall have all the real pleaſures and enjoyments, which our inferior and animal nature can ſupply; exempt from the many inconveniences ariſing from the impetuoſity and exceſſes of ungovern'd appetite; and attended with the greateſt bleſſing of life, an unruffled ſerenity and vigour of mind, the reſult of temperate and regular deſires, juſt and rational purſuits, and conſcious

conſcious innocence. Our moral ſenſe ſhould have its full ſcope under the direction of reaſon, and the ſupremacy of conſcience: The joint force of which will ſecure us in an invariable rectitude of conduct, and the practice of every virtue both public and private. And our ſocial affections ſhould be guided and aſſiſted by every principle and every motive of our holy religion, of which unlimited benevolence is the grand characteriſtic, to purſue the end, for which they were interwoven in our nature, the general happineſs of all around us; a law, by which the divine being himſelf regulates his own conduct, and in the obſervance of which every individual finds his own happineſs.

III. We ought to preſerve an high eſteem for the memory of thoſe great and good men, who by their example and encouragement, their writings and generous foundations, have endeavoured the promotion of uſeful knowledge, and particularly ſuch, as relates to the ſtudy of nature; which is at once conducive to the benefit of man and the honour of GOD, and is the moſt effectual preſervative from all ſuperſtition and falſe religion, and from, what is ſtill the more formidable extreme, all contempt of the true. The greateſt maſter of natural philoſophy of the laſt age || was, we know, equally eminent for his piety. And all the advantages of fortune

|| The honourable Mr. BOYLE, whoſe works contain many judicious obſervations on the nature and ſtructure of man; one of which deſerves a place here. "And here, ſays he, I obſerve (what perhaps has not been conſi-" dered) that neither the mechaniſm of a human body, nor that of very " con-

fortune and family could never divert him from an entire application to that branch of ſcience, which he thought of the higheſt importance to the ſupport of religion, of which he has eſtabliſh'd a perpetual defence in his noble inſtitution of an annual courſe of lectures, which, even ſeparately from his own invaluable writings, are ſufficient to immortalize his name.

" conſiderable parts of it, is to be judged of only by the ſtructure of the " viſible parts; whether they be thoſe ſolid or ſtable ones, that the anato- " miſt's knife is wont to expoſe to ſight; or even by the texture of thoſe " fluid ones, which are to be found in the veſſels and cavities of a dead body, " when diſſected, tho' never ſo ſkilfully. For I take the body of a living man " to be a very compounded engine, ſuch as mechanicians would call *hydrau-* " *lico-pneumatical*; many of whoſe functions (if not the chiefeſt) are per- " formed, not by the blood and other viſible fluids, barely as they are li- " quors, but partly by their circulating and other motions, and partly by a " very agile and inviſible ſort of fluids, called ſpirits, vital and animal, and " partly perhaps (as I have ſometimes gueſſed) by little ſpringy particles, " and perhaps too by ſomewhat, that may be called the vital portion of " the air, and by things analogous to local ferments, the important opera- " tions of all which are wont to ceaſe with life, and the agents themſelves " are not to be diſcerned in a dead body. So that beſides theſe manifeſt " uſes, which the viſible fabric of the engine may ſuggeſt to an anatomiſt, " there may be chemical uſes (if I may ſo call them) of ſome parts, that " ſerve for the elaboration of ſpirits and other fluids; which uſes are not " ſuggeſted to the anatomiſts, as ſuch, by the inſpection of the ſtructure of " the parts; but to diſcern them may require no mean ſkill in ſpagyrical " principles and operations." Diſquiſitions about the final cauſes of natural things. Propoſ. iv. Works, tom. iv. p. 549.

Nor

Nor would it be decent or juſt in me to omit here the honour due to the learned phyſician §, who firſt deſign'd, what was afterwards

§ Dr. WILLIAM CROUNE, who was born in *London*, and educated in Emanuel College in *Cambridge*, where he took the degree of batchelor of arts in 1650, and the year following was elected a fellow of that college, and commenced maſter of arts in 1654. On the 8th of *June* 1659, he was choſen profeſſor of rhetoric in Greſham College, and zealouſly promoted the inſtitution of the Royal Society, which aſſembled there; and at their firſt meeting, when form'd into a regular body, *November* the 28th, 1660, he was, tho' abſent, appointed their regiſter, whoſe buſineſs it was to take minutes of what paſs'd at their meetings. He continued in that office till the grant of their charter, by which Dr. WILKINS and Mr. OLDENBURG were nominated joint ſecretaries. He was created doctor of phyſic at *Cambridge*, *October* the 7th 1662, by the king's mandate; and *May* the 20th 1663, was choſen one of the firſt Fellows of the Royal Society, after the grant of their charter. *June* 25th the ſame year he was admitted a candidate of the College of Phyſicians; and on the 28th of *Auguſt* 1670, was choſen anatomy-lecturer on the muſcles to the company of ſurgeons, upon the reſignation, and by the recommendation, of Sir CHARLES SCARBOROUGH. On the 21ſt of *October* the ſame year he reſign'd his profeſſorſhip in Greſham College, and ſoon after married MARY daughter of JOHN LORYMER of *London*, Eſq; *July* the 29th 1675, he was admitted a Fellow of the College of Phyſicians, after having waited for a vacancy above twelve years. He died of a fever *October* the 12th 1684, and was interr'd in St. *Mildred*'s church in the *Poultry*. He publiſh'd a diſſertation *de ratione motus muſculorum*, printed at *London* 1664 in 4to. and *an hypotheſis of the ſtructure of a muſcle, and the reaſon of its contraction*, printed in Mr. HOOKE's *Philoſophical Collections*, N° 11. Sect. 8. p. 22. Several other pieces of his are preſerv'd in the regiſters of the Royal Society, particularly a diſcourſe *of the rudiments of a chick in an egg not incubated*. By his will he left 100 *l.* to the ſurgeons company, and his books relating to his own faculy to the College

afterwards executed by his worthy widow, the foundation of this anniverſary ſermon, together with lectures upon ſome of the moſt curious ſubjects in the animal œconomy, the muſcles, nerves, and brain, to be read in the College of Phyſicians, of which he was a diſtinguiſh'd member; and upon the nature and laws of muſcular motion before the Royal Society, of which he was one of the earlieſt ornaments. His *ſerious and aweful ſenſe of the divine majeſty*, which the incomparable Dr. SCOT, his particular friend, obſerves *, he expreſs'd upon all proper occaſions; his uncommon benevolence to his fellow-creatures; and his accurate and extenſive ſkill in his own profeſſion, concurr'd to induce him to devote ſome part of his fortune to the purpoſes of extending the knowledge of the human body, and building upon it ſuch concluſions, as might fix men in ſo ſtrong and well grounded a perſuaſion of an eternal firſt cauſe, of infinite power, wiſdom and

lege of Phyſicians, and his mathematical books to Emanuel College. His widow, who afterwards married Sir EDWIN SADLEIR, Bart. purſuing the doctor's intentions, founded by her will algebra lectures at Emanuel, King's, St. John's, Sidney, Trinity, and Jeſus Colleges, Pembroke Hall, Queen's College, and Peter Houſe, in *Cambridge*; as well as thoſe upon the muſcles, nerves, and brain of the human body, in the College of phyſicians, and upon muſcular motion in the Royal Society; of the inſtitution of both which lectures Dr. CROUNE left behind him a plan. But the circumſtances of the legacy for the ſupport of the lecture in the College of Phyſicians, and of the ſermon, prevented them from taking place till the preſent year. WARD's *Lives of the Profeſſors of* Greſham College, p. 320—327.

* Sermon preach'd at the funeral of Dr. WILLIAM CROUNE on the 23d of *October* 1684, p. 28.

goodneſs,

goodneſs, as is of the higheſt conſequence to a firm and ſolid peace of mind, the preſervation of public order, and the general happineſs of the world.

I cannot conclude this diſcourſe with more force, propriety and authority, than in the beautiful words of the wiſe Son of *Sirach*. *Eccleſ.* xvii. "1. The LORD created man of the earth. "3. He endued them with ſtrength by themſelves, and "made them according to his image. 4. And put the fear "of man upon all fleſh, and gave him dominion over "beaſts and fowls. 6. Counſel, and a tongue, and eyes, ears, "and a heart gave he them to underſtand. 7. Withall he "filled them with the knowledge of underſtanding, and "ſhewed them good and evil. 8. He ſet his eye upon their "hearts, that he might ſhew them the greatneſs of his "works. 9. He gave them to glory in his marvellous acts for "ever, that they might declare his works with underſtanding. "14. And he ſaid unto them, beware of all unrighteouſneſs; "and he gave every man commandment concerning his "neighbour. 29. How great is the loving-kindneſs of the "Lord our GOD, and his compaſſion unto ſuch, as turn "unto him in holineſs!"

FINIS.

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